for Use with Support Surfaces", U.S. Patent Application Serial Number 14/720,799, filed on May 24, 2015 and entitled "Liquid Containment System", U.S. Patent Application Serial Number 14/336,163, filed on July 21, 2014 and entitled "Apparatus and Methods for Providing Illuminated Signals from a Support Surface", U.S. Provisional Patent Application Serial Number 62/322,458 filed on April 14, 2016 and entitled "Apparatus, System and Methods for Providing Accessories on a Support Surface", each of which has a common Assignee as the present patent application and the entire contents of which are hereby incorporated by reference herein in their entireties.

[00073] Still referring to Figure 3, in the illustrated embodiment, each mat 26 is flat, or planar, and constructed of impermeable material, such as thermoplastic. Other example mats 26 may be constructed entirely or partially of wood, steel, steel-framed wood, aluminum, rubber, plastic, fiberglass, fiber reinforced plastic, recycled rubber or materials or any other desired material(s) or a combination thereof.

[00074] The exemplary mat 26 has a rectangular shape with an opposing pair of short sides 28, 30, an opposing pair of long sides 37, 38, and an edge 44 extending along each side 28, 30, 37 and 38. In this particular example, the first short side 28 and first long side 37 each have an upper lip 46 extending horizontally outwardly therefrom, forming the edge 44 and which will be spaced above the earth's surface, or ground, 20 or other surface. The second short side 30 and second long side 38 each have a lower lip 54 extending horizontally outwardly therefrom below the edge 44 thereof and which will rest on or near the earth's surface, or ground, 20 or other surface. In this embodiment, a first corner 40 of the mat 26 is formed by the adjacent upper lips 46 and a second corner 42 is formed by the adjacent lower lips 54.

[000120] In the illustrated embodiment, the electrical connection bar 270 is shown releasably coupled to two locking pin holes 32 of the EPZ mat 112. For example, as shown in Figure 31, at each such locking pin hole 32, a bolt 282 (or other connector, such as a pin, screw etc.) may extend through an anchor hole 272 in the connector bar 270 then through the locking pin hole 32. The exemplary bolt 282 (or other connector) may, for example, be releaseably secured below the mat 112 to a threaded anchor base 284 placed below the locking pin hole 32. If desired, the bolt 282 may threadably engage a nut 286 welded to, or otherwise extending from, the upper surface of the anchor base 284. As shown in Figure 32, under the mat 26, the exemplary anchor base 284 releasably secures the electrical connection bar 270 to the mat 26 at least partially around the locking pin hole 32. However, any other method and mechanism for coupling the bar 270 to one or more mats 26 may be used.

[000121] If desired, the electrical connection bar 270 may be useful at different locations on the mat 112 to provide flexibility in the location of electrical connection components or other desired purpose. In this example, the electrical connection bar 270 may be coupled to the two locking pin holes 32 closest to the first corner 40 of the mat 26 on either the first long side 37 (Figures 30-32) or the first short side 28 (Figures 33-35) of the mat 26. However, in other embodiments, the electrical connection bar 270 may be coupled to different locking pin holes 32 or any other desired portion or component of the mat 112 or load supporting surface 16.

[000122] Referring back to Figure 28, the electrical connection bar 270 may be electrically coupled to the EPZ mat 112 in any desired manner. In this example, the bar 270 abuts and electrically contacts the electrically-conductive cut-out frames 180 of the cover 110. The bar 270 may also, or instead, abut and electrically contact the mesh portion 126 and/or frame 120 of the cover 110. In other embodiments, the bar 270 may be electrically coupled to a different part or component of the mat 112 or load-supporting surface 16.

CLAIMS

1. System for electrically grounding a reusable load-supporting surface deployed on or near the surface of the earth, the system comprising:

at least two mats at least partially forming the load-supporting surface, each said mat having planar respective top and bottom faces, multiple sides and at least one edge extending around each said side, said mats being configured to support the weight and movement of personnel, vehicles and equipment thereupon; and

a plurality of planar, removable, electrically-conductive covers constructed at least partially of electrically-conductive material and constructed and arranged to support the weight and movement of personnel, vehicles and equipment thereupon, each said cover extending at least partially across said top face of one of said mats without extending over any of said edges thereof and being flexibly coupled to said associated mat to allow said mat to flex, expand and contract relative to said cover due to one or more environmental factors and the movement of personnel, vehicles and/or equipment across the load-supporting surface during normal, typical or expected use conditions without decoupling said cover from said associated mat and without undesirably damaging or deforming said cover or said mat while allowing said cover and said mat to support the weight and movement of personnel, vehicles and equipment thereupon, each said cover having at least one conductive interface configured to electrically couple said cover to another said cover of the load-supporting surface, and at least one of said covers being configured to be electrically coupled to the earth.

2. The system of claim 1 wherein each said cover is releasably coupled to said associated mat with a plurality of releasable couplers, at least some of said couplers being

least one of said threaded orifices of said outer frame of another said cover to electrically couple said covers in the load-supporting surface.

14. The system of claim 13 wherein said at least one electrical connector is flexible to allow relative movement between said electrically coupled covers.

15. The system of claim 13 wherein said at least one electrical connector is coupled between said electrically coupled covers with slack to allow relative movement between said covers.

16. Apparatus for electrically grounding at least two mats of a load-supporting surface deployed on or near the surface of the earth, each mat having planar respective top and bottom faces, multiple sides and at least one edge extending around each side thereof, the mats being constructed and arranged to support the weight and movement of personnel, vehicles and equipment thereupon, the apparatus comprising:

a plurality of planar, removable, electrically-conductive covers constructed at least partially of electrically-conductive material and constructed and arranged to support the weight and movement of personnel, vehicles and equipment thereupon, each said cover extending at least partially across the top face of one of the mats without extending over any of the edges thereof, each said cover including at least one conductive interface configured to electrically couple said cover to another said cover in the load-supporting surface, at least one of said covers being configured to be electrically coupled to the earth; and

a plurality of adjustable, releasable couplers configured to releasably couple each said cover to its associated mat, at least some of said couplers being loosely engaged between, and

mat having planar respective top and bottom faces, multiple sides and at least one edge extending around each side, the mats being configured to support the weight and movement of personnel, vehicles and equipment thereupon, the method comprising:

positioning one among a plurality of planar, removable, electrically-conductive covers at least partially across the top face of each mat without extending over any of the edges thereof, each cover being constructed at least partially of electrically-conductive material and configured to support the weight and movement of personnel, vehicles and equipment thereupon;

selectively, loosely, releasably engaging a plurality of selectively adjustable, releasable, couplers between each cover and its associated mat so that each cover stays positioned at least partially across the top face of its associated mat during use of the load-supporting surface and to allow at least one among the cover and mat to be moveable relative to the other due to one or more environmental factors during normal, typical or expected use conditions of the load-supporting surface without decoupling the cover from its associated mat and without undesirably damaging or deforming the cover or the mat, while allowing the cover and the mat to support the weight and movement of personnel, vehicles and equipment thereupon;

electrically coupling at least one conductive interface of each cover to at least one conductive interface of at least one other cover in the load-supporting surface; and

grounding at least one of the mats.

21. The method of claim 20 wherein each coupler includes an elongated body having an outer diameter and being configured to extend through an aperture formed in the associated mat to secure the associated cover to the mat, wherein at least some of the apertures formed in each mat have an inner diameter that is larger than the outer diameter of the elongated

portion of the associated coupler, further including inserting each coupler into an aperture in its associated mat, and at least some of the couplers moving side-to-side relative to the mat.

22. The method of claim 20 further including at least one adjustable, releasable anchor securing each coupler to its associated mat below the bottom face of the mat with, and at least some of the anchors associated with each mat engaging their associated couplers spaced below the bottom face of the mat to selectively, releasably loosely secure each cover to its associated mat and allow relative movement therebetween.